

Thus, method and system for forward link beam forming in wireless communications have been described.

WHAT IS CLAIMED IS:

CLAIMS

1. A method comprising the steps of:

2 using an antenna beam pattern to send a communication signal to a user;

determining a statistic using a control signal from said user;

4 utilizing said statistic to narrow said antenna beam pattern and to direct said

antenna beam pattern to said user.

2. The method of claim 1 further comprising storing said antenna beam

pattern after said utilizing step.

2. The method of claim 1 wherein said utilizing step comprises using a

dithering algorithm to optimize said antenna beam pattern.

4. The method of claim 1 wherein said control signal is a power control

2 signal.

5. The method of claim 1 wherein said control signal is a data rate control

2 signal.

6. The method of claim 1 wherein said statistic is an average of said control

2 signal over a specified interval of time.

7. The method of claim 1 wherein said statistic is a running average of said
2 control signal.

8. The method of claim 1 wherein said statistic is a weighted average of
2 said control signal.

9. The method of claim 1 wherein said antenna beam pattern is formed
2 using an adaptive antenna array.

10. The method of claim 1 wherein said communication signal is sent over a
2 forward link of a wireless communication system.

11. The method of claim 10 wherein said wireless communication system is
a wideband code division multiple access communication system.

12. A system comprising:
2 a control signal monitoring module configured to access a control signal from a
user;
4 a signal statistic computation module configured to determine a statistic from a
sequence of monitored signals output by said signal monitoring module;
6 an antenna beam pattern optimizing module configured to utilize said statistic
to narrow an antenna beam pattern to be directed to said user.

13. The system of claim 12 further comprising an adaptive antenna array

2 module configured to output and direct said antenna beam pattern to said user.

14. The system of claim 12 further comprising an antenna beam pattern

2 storing module configured to store said antenna beam pattern.

15. The system of claim 12 wherein said antenna beam pattern optimizing

2 module uses a dithering algorithm to optimize said antenna beam pattern.

16. The system of claim 12 wherein said control signal is a power control

signal.

17. The system of claim 12 wherein said control signal is a data rate control

signal.

18. The system of claim 12 wherein said statistic is an average of said

2 sequence of monitored signals over a specified interval of time.

19. The system of claim 12 wherein said statistic is a running average of said

2 sequence of monitored signals.

20. The system of claim 12 wherein said statistic is a weighted average of

2 said sequence of monitored signals.

21. The system of claim 12 wherein said antenna beam pattern is used to

2 send a communication signal to said user.

22. The system of claim 21 wherein said communication signal is sent over a
2 forward link of a wireless communication system.

23. The system of claim 22 wherein said wireless communication system is a
2 wideband code division multiple access communication system.

PCT/HK2010/000220